

**FACULTY OF ENGINEERING**  
**B.E. 3/4 (M/AE) II – Semester (Main) Examination, June 2014**

**Subject: CAD / CAM**

**Time: 3 Hours**

**Max.Marks: 75**

**Note: Answer all questions from Part A. Answer any five questions from Part B.**

**PART – A (25 Marks)**

- 1 What are properties of splines?
- 2 Explain any four wire-frame entities.
- 3 What are the advantages of parametric representation of entities?
- 4 What is finite element modelling?
- 5 Write transformation matrices for rotation and scaling.
- 6 Explain IGES and STEP formats.
- 7 What is the advantage of canned cycle?
- 8 What are the advantages of rapid prototyping?
- 9 Mention the applications of reverse engineering.
- 10 What is meant by Turnkey CAD/CAM system?

**PART – B (50 Marks)**

- |    |   |    |
|----|---|----|
| 11 | (a) What are the characteristics of Bezier curves? Explain with sketches. | 5  |
|    | (b) Give applications of NURBS curves.                                    | 5  |
| 12 | Differentiate wire-frame, surface and solid modelling.                    | 10 |
| 13 | (a) Explain various CAD databases.  | 5  |
|    | (b) What are G codes and M codes?   | 5  |
| 14 | Write the part programming for the following component shown in Figure 1. | 10 |

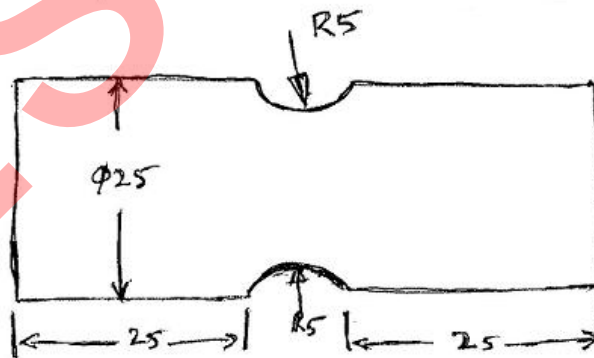


Fig. 1.

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|----|--|----|
| 15 | (a) Differentiate CNC and DNC.                       | 5  |
|    | (b) Explain programming methods for robotic systems. | 5  |
| 16 | (a) Write in brief about opitz type of GT.           | 5  |
|    | (b) What is variant and generative process planning? | 5  |
| 17 | Write short note on following:                       | 10 |
|    | a) Mass property calculations      b) Robot Anatomy  |    |
|    | c) Computer Aided Inspection.                        |    |

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